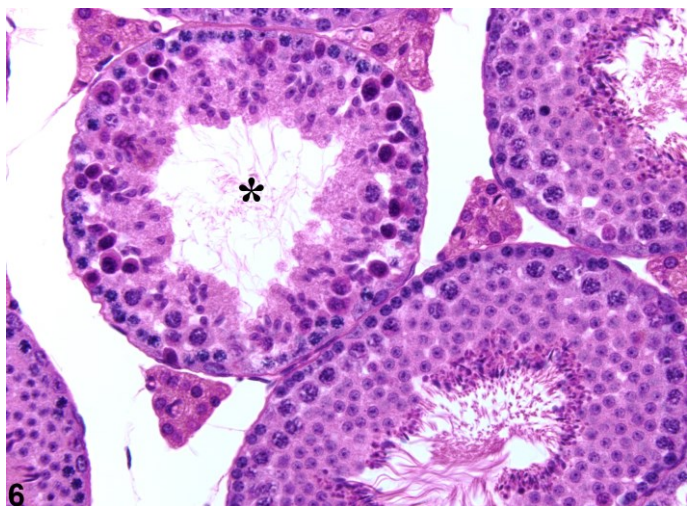
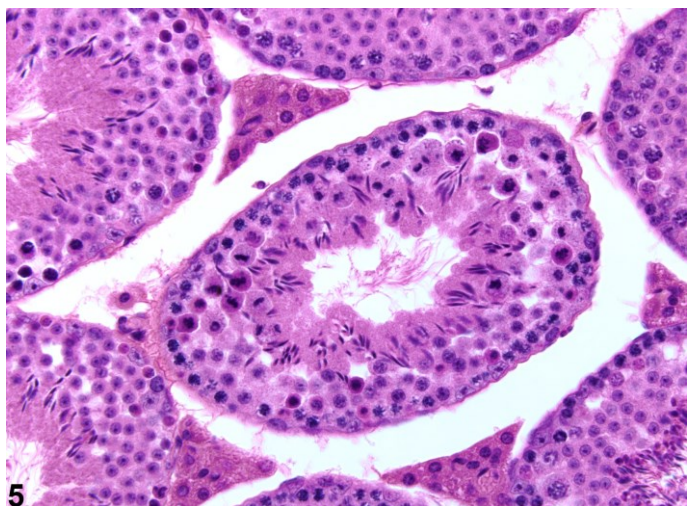
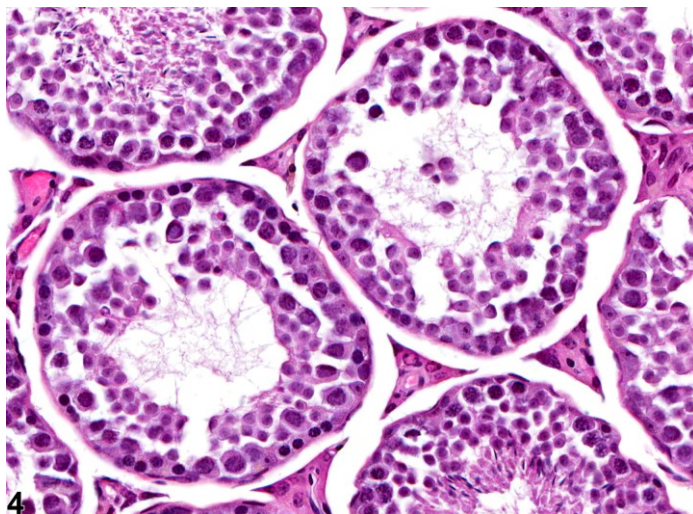
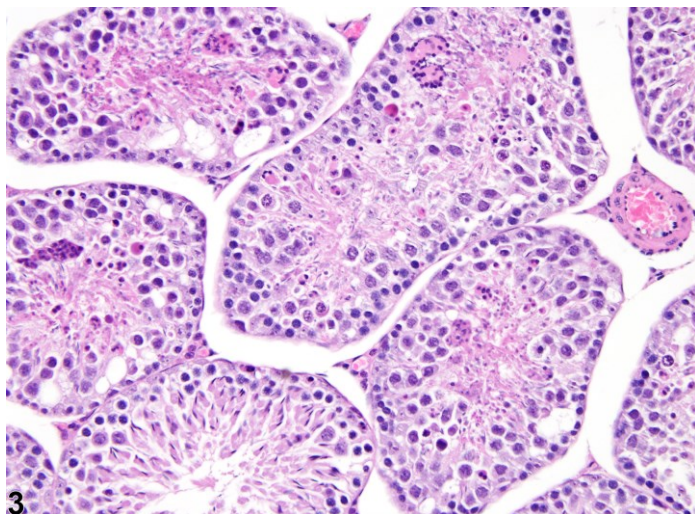
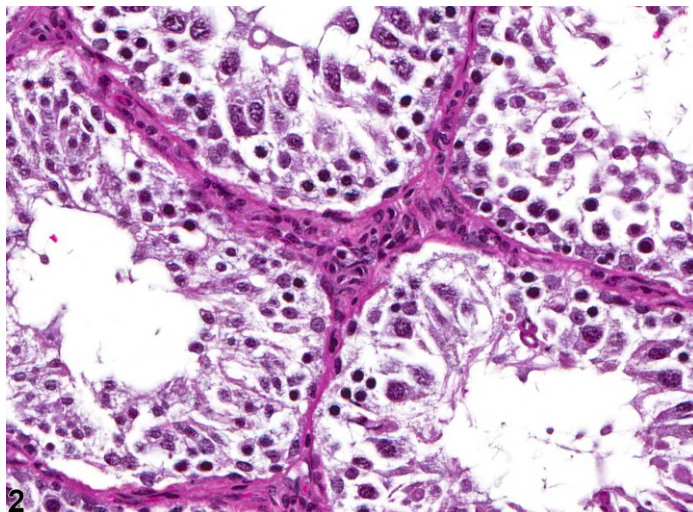
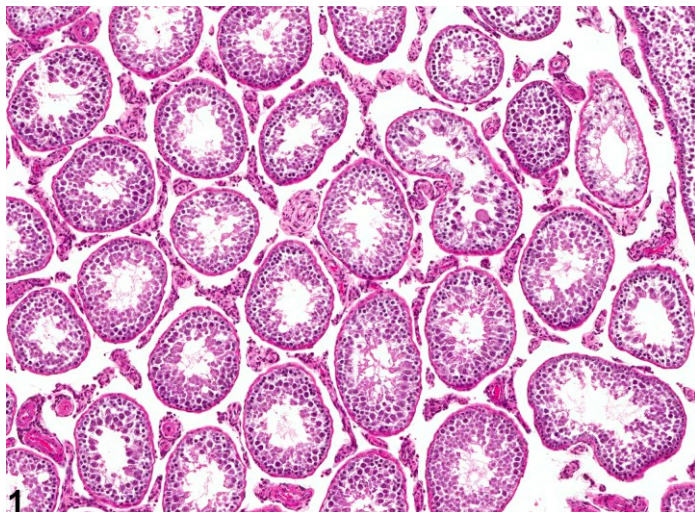


# NTP Nonneoplastic Lesion Atlas

## *Testis, Germ cell – Degeneration*







# NTP Nonneoplastic Lesion Atlas

## *Testis, Germ cell – Degeneration*

**Figure Legend:** **Figure 1** Testis, Germ cell - Degeneration in a male F344/N rat from a chronic study. Degeneration is present in multiple seminiferous tubules. **Figure 2** Testis, Germ cell - Degeneration in a male F344/N rat from a chronic study. This figure shows disorganized arrangement of germ cells in seminiferous tubules. **Figure 3** Testis, Germ cell - Degeneration in a male B6C3F1 mouse from a subchronic study. Degeneration is characterized by disorganized arrangement of germ cells in seminiferous tubules. **Figure 4** Testis, Germ cell - Degeneration in a male B6C3F1 mouse from a subchronic study. A normal spectrum of germ cells is absent in seminiferous tubules. **Figure 5** Testis, Germ cell - Degeneration in a male BALB/c mouse 12 hours after exposure. Germ-cell-specific degeneration affecting dividing spermatocytes in a stage XII seminiferous tubule. **Figure 6** Testis, Germ cell - Degeneration in a male BALB/c mouse 12 hours after exposure. Germ-cell-specific degeneration of pachytene spermatocytes in a stage X tubule (asterisk).

**Comment:** *Germ cell degeneration* is a nonspecific term that generally includes a number of degenerative features, such as tubular vacuolation, partial depletion of germ cells, degenerating (multinucleated or apoptotic) germ cells, and disordered arrangement of the germ cell layers (Figure 1, Figure 2, Figure 3, and Figure 4). Depending on severity, there may be a macroscopic reduction in size of the testis and a reduction in organ weight. The condition may progress to total loss of germ cells (see “Testis, Germinal epithelium - Atrophy”), leaving contracted tubules lined only by Sertoli cells. Frequently, there is a mixed effect on seminiferous tubules, with some showing degeneration and others having progressed to atrophy. Chemically induced germ cell degeneration can be multifocal in distribution, but it is most often a bilateral lesion that affects most of the seminiferous tubules to varying degrees (Figure 1). It can also be an incidental background finding in rats and mice of any age, but the incidence increases with age. Depending upon the toxicant, in short-duration studies (~14-28 days) the earliest evidence of germ cell degeneration may be preceded by specific degenerative features, such as germ cell vacuolation or cell-specific degeneration/depletion of germ cells.



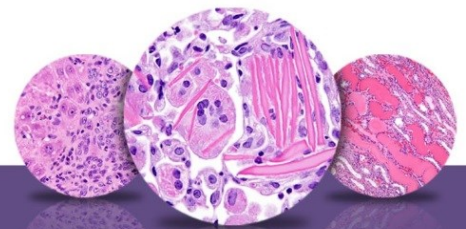
# NTP Nonneoplastic Lesion Atlas

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**Recommendation:** In routine toxicity studies, germ cell degeneration should be diagnosed and graded and should be discussed in the pathology narrative if it is considered the primary change and if the incidence and/or severity appears to be related to chemical administration. If both testes are affected, the diagnosis should indicate the condition is bilateral, and severity should be based on the more severely affected testis. Since degeneration is thought to be a precursor to atrophy, degeneration should be diagnosed unless the majority of the tubules are devoid of germ cells, in which case atrophy is the preferred diagnosis. The concomitant presence of some germ cell atrophy or evidence that germ-cell-specific degeneration/depletion is present can be mentioned in the pathology narrative. If both terms are used in a single study, it is incumbent upon the pathologist to describe the relationship between the two lesions in the pathology narrative.

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## *Testis, Germ cell – Degeneration*

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